

5 What is claimed is:

1. An image sensor fabricated on a substrate comprising:  
 a CMOS image sensor for defining an image signal photoelectrically converted in response to received light;  
 an array of non-volatile memory cells for receiving and storing the image  
 10 signal, wherein each memory cell stores a trapped charge; and  
 a level of protective material fabricated over the array of non-volatile memory cells for blocking the light received by the CMOS imager so that the trapped charged is not erased from exposure to the light.
2. The image sensor of claim 1 wherein each memory cell is a field effect transistor with a floating gate.
3. The image sensor of claim 1 wherein the level of protective material is polyamide.
- 20 4. The image sensor of claim 1 wherein the level of protective material is fabricated as part of the CMOS imager.
5. The image sensor of claim 1 wherein the level of protective material is a  
 25 layer of metal fabricated as an interconnect for electrically connecting the CMOS imager and other circuits on the substrate.
6. The image sensor of claim 1 wherein the CMOS imager comprises an active pixel array.
- 30 7. The image sensor of claim 1 wherein the CMOS imager comprises a passive pixel array.

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- 5 8. An image sensor on an integrated circuit comprising:  
 a CMOS imager for defining an image in response to received light;  
 a non-volatile memory unit for storing the image, wherein the non-volatile  
 memory unit is fabricated adjacent to the CMOS imager; and  
 a level of protective material fabricated over the non-volatile memory for  
 10 blocking the light received by the CMOS imager.
9. The image sensor of claim 8 wherein the level of protective material is  
 fabricated as part of the CMOS imager.
- 15 10. The image sensor of claim 8 further comprising a micro-controller for  
 controlling transfer of the image from the CMOS imager to the non-volatile memory  
 unit.
11. The image sensor of claim 10 wherein the non-volatile memory stores  
 20 program code information for controlling the microcontroller.
12. The image sensor of claim 8 further comprising a digital signal processor for  
 receiving and processing the image from the CMOS imager.
- 25 13. The image sensor of claim 8 wherein the level of protective material is a  
 layer of metal.
14. The image sensor of claim 8 wherein the layer of metal is fabricated as an  
 interconnect for electrically connecting the CMOS imager and other circuits on the  
 30 substrate.
15. An image sensor on an integrated circuit comprising:  
 a CMOS imager for defining an image in response to received light;  
 a microcontroller for controlling the CMOS imager;

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a digital to analog convertor for converting the digital image signal to an analog image signal, wherein the digital signal processor and the digital to analog convertor are fabricated on the single integrated circuit; and

an electronic view finder for viewing the image.

15 22. The digital camera of claim 19 wherein the protective layer is fabricated as  
part of the CMOS imager sensor.

24. The digital camera of claim 19 wherein the protective layer is fabricated as a metal interconnect layer for electrically connecting circuits on the integrated circuit.

26. The digital camera of claim 19 wherein the CMOS imager comprises a passive pixel array.

fabricating a light blocking layer over the non-volatile memory cells; and

*A7 and*  
fabricating the CMOS imager for defining an image in response to received light.

*B*  
28. The method of claim 27 wherein the light blocking layer is a metal layer used as an interconnect for electrically connecting other circuits on the integrated circuit.

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